

U.S. Application No. 10/617,681

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The Applicants request reconsideration of the rejection.

Claims 56-65 remain pending.

Claims 56-61 and 63-64 are rejected under 35 U.S.C. §103(a) as being unpatentable over Walberg et al. U.S. Patent No. 4,233,666 (Walberg) in view of the admitted prior art set forth in the present specification. The Applicants traverse as follows.

The two pending independent claims (claim 56 and claim 58) are directed to a method of starting up disk drive spindle motors in an array disk system, and to an array disk system, respectively. The array disk system recited in each claim has disk drives organized into groups which are started up separately so as to reduce the amount of electric current required by the array disk system.

According to the method of claim 56, current is supplied to start up a first group of the spindle motors initially, wherein the first group has more than one spindle motor but less than all of the spindle motors. After this step, claim 56 requires the step of supplying current to additionally start up one or more of the remaining spindle motors other than the first group started up initially.

System claim 58 recites a plurality of disk drive spindle motors, and a power supply electrically connected to the disk drive spindle motors. According to claim 58, the power supply supplies current to start up a first group of the spindle motors initially, the first group having more than one spindle motor but less than all of the

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spindle motors. Then, the power supply additionally supplies current to start up one or more of the remaining spindle motors other than the first group started up initially.

Thus, each of the independent claims, and consequently each of the claims dependent therefrom, requires more than one spindle motor to be started up with the initially-supplied current followed by the start up of at least one more of the remaining spindle motors.

By these features of the present invention, conflicting requirements are balanced; namely, when the method or system starts up, the amount of electric current is reduced, and the time required for starting the disk drives is kept to a minimum. These advantages flow from the fact that, if all of the disk drives are started up simultaneously, a large amount of electric current is needed, but if the disk drives are started up one-by-one (as taught by Walberg, for example) in order to reduce the amount of electric current, a long time is required to start up all of the disk drives. Thus, according to the claimed invention, the disk drives are organized into groups, the initially-started up group having more than one disk drive, and the groups of disk drives are started up in turn.

The primary reference to Walberg fails to show or even suggest these limitations. The Applicants note that Walberg discloses power sequencing circuit coupled to a single control line 40 that is common to all of the disk drives. Each spindle motor of Walberg has its own programmable micro-processing unit to allow the respective spindle motors to start up sequentially. As noted in col. 5, lines 15-21, Walberg teaches that it is important that the order of start-up is not controlled, but

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only that the drives start at "mutually exclusive times." According to Walberg, the drives can do this with merely the information that enable line 40 is available. Walberg does not suggest to start a group of spindle motors (that is, more than one spindle motor, but less than all of the spindle motors) in the initial start-up as required by independent claims 56 and 58.

The Office Action recognizes this fact and thus cites allegedly admitted art as disclosing groups of motors in an array disk system, although the Applicants note that the Office Action does not assert that the admitted art discloses the start-up of groups as required by the claims.

Indeed, the description of the admitted art in the present specification states that groups 291 – 295 are "power groups" which are controlled with respect to power supplies for disk drives and cooling fans, respectively. The description states no more than that the power supplies are controlled for each power group.

Moreover, even if the power groups were said to be started up at different times, the output current required for each power group would not be reduced because, in each power group, the disk drives themselves are not divided into groups. In other words, the power supply source in a power group supplies disk drives which belong to the same power group with current simultaneously. Accordingly, the overall current being supplied is not reduced, and thus one cannot say that the power groups disclosed as admitted art correspond to the disk drive groups of the present claims.

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Consequently, because neither Walberg nor the admitted art discloses the features of the present invention which lend the stated advantages to the present invention, it necessarily follows that the combination of Walberg and the admitted art fails to reach the claimed invention.


The Applicants acknowledge, with thanks, the indication of allowable subject matter in claims 62 and 65. However, the Applicants believe that all claims should be considered free of the prior art, and thus opt not to rewrite claims 62 and 65 into independent form at this time.

In view of the foregoing remarks, the Applicants request reconsideration of the rejection.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. TMI-5004-08).

Respectfully submitted,

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